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ART. I.—*On the advantage of exact observation and knowledge of the Foliage of Fruit Trees and Flowering Plants.*—By J. E. TESCHEMACHER.

IT has always appeared to me that many of the most important discoveries yet to be made in Botanical knowledge may originate in experiments on and attention paid to the forms and functions of the leaves of plants.

The roots extract the juices from the earth, the stems and branches convey these juices nearly unaltered to the leaves — but these are nature's true laboratories — in them the sap is evaporated to its due consistence — is prepared for analyzation and separation into portions, each containing the quantity necessary for the development of every perfection of flower and seed, leaving a residue which is returned to the root by vessels assigned for that purpose. The surfaces of leaves contain pores by which carbonic acid gas is absorbed and oxygen exhaled — in factin the leaves is performed almost every operation which is requisite to fit the sap of a plant for producing the flower, its colors and fragrance, its stamens, pistils, pollen and seed; nor is this flower or seed produced until the leaves have accumulated sufficient of this prepared juice to bring them into being and perfection. In some plants as annuals this takes but the short period of one year; in perennial plants two years are requisite; in many fruit trees as apple, pears, &c. several years elapse ere the elaborated sap in the leaves accumulates sufficiently to produce

fruit — and in the great American Aloe (Agave Americana) fifty to one hundred years are necessary before its leaves give birth to its magnificent spike of flowers.

Those who superintend nurseries where young fruit trees are raised, or who possess orchards on a large scale, might make many interesting observations on this subject; for instance, many trees bearing large fruit have large leaves, at least among pears, few with small leaves bear large and fine fruit; attention to such facts will always facilitate a judicious selection amongst numerous seedling plants, and save both time and trouble, particularly in those cases where many years are required previous to the ripening of fruit, and when purchases are made in the autumn, as no means of discrimination then remain then but the leaf; there are other distinguishing appearances of leaves on which correct judgment may be formed—as shape, woolliness, &c. Mr Van Mons has already made several experiments on this subject, which are well worth studying; proceeding as they do from so practised an eye and such an intelligent mind.

It is generally admitted amongst vegetable physiologists that the flower, (corolla,) its pistils, stamens, seed, vessels, &c., are but so many different transmutations of the true leaf. Thus the Calyx is a combination of several leaves, either distinct, or joined together at their edges according to its form; the flower also leaves, distinct or joined, adorned with various colors; the stamens equally leaves, bearing anthers, but when forming a double flower without them. This is beautifully exemplified in several of the lately raised Camellias, for example, in that figured in the first volume of the Register — var., Kurtzii. The pistil and seed vessel are leaves rolled up and combined according to particular laws, the study of which is one of the greatest pleasures of the botanist, they furnishing marks which serve as excellent distinctions of different genera and species.

Still unless some use be shewn in making these observations the time occupied in them would be idly spent.

Thus the petal *(flower leaf)* of the flower, being a true leaf, but nearer the seed and more distinctly connected with it than the green foliage, may be reasonably expected to exert a more direct influence on its quality; — that it does so is well known to every florist, who, invariably finds that seeds from semi-double flowers, that is those containing an unusual quantity of petals, produce most double flowers. What this influence is or in what manner it is exerted, whether

the increased number of petals sends a larger quantity of petalic juice to be condensed in one seed, or whether this juice is by the extra number of petals exposed to a larger surface of heat and light or gaseous action and thus increased in the peculiar faculty of transmuting stamens into flower leaves, are questions for botanical experiment. But the fact has been long known, and observed, for I find in an old work on gardening published 150 years ago, the acute remark, that those stock gilly flowers which have most leaves will produce most seed of double flowers adding, "When in seed flowers we find one more leaf than usual, conclude that nature has prepared for an alteration." Then in flowers where the seed forms the centre surrounded by the petals, for instance in the Composite tribe containing the dahlia, sunflower, &c., the Ranunculus tribe and others, the additional petals when it is inclined to become double generally appear first on the outer edge of the centre, and not in the middle — in other words, near to the usual petals. In gathering the seed of these flowers therefore from which to raise other double ones, those which lie nearest these unusual petals are most likely to produce the desired effect. I have no doubt, facts equally interesting may be observed of double flowers in other tribes. And do not let the Botanist turn away in disgust when he sees a double flower, calling it a monstrous imperfection, but rather submit it to scientific examination. It will be found as direct and perfect an operation of nature, although perhaps more complicated, as that which produces his type of perfection, the single flower.

It is however to the green leaves of trees and plants that I would invite more especial attention, and that no doubt may exist of the importance attached to the character of foliage, I would observe that the three grand divisions of the vegetable world are characterized by a peculiar and distinct organization of the leaves. Thus the division of EXOGENOUS plants or those with bark wood and pith as the oak, elm, rose, &c., have them universally with a net work of veins branching in every direction. The division of ENDOGENOUS plants or those without bark or pith as the cane, the palm, &c., have them with veins running in parallel lines from the tip of the leaf to the stalk.

The division of ACROGENOUS plants, as ferns, &c., when the leaves have veins at all have them forked.

The most common observer cannot fail being delighted with the

beauty of the first leaves that burst from the different varieties of rose bushes. Those of the Celestial rose, for instance, are of a bright brownish red, round at the upper end, covered with a soft glaucous hue, which last indeed is a peculiarity attendant more or less on all white and slightly tinged roses. The leaves of some of the late imported varieties are exquisitely beautiful, particularly one called *Lafleche Mousseuse*, the midrib and edge of which is covered with long moss. Most seedling varieties of flowers differ from each other in foliage, and few more than roses. The study of this part of a plant would of course considerably increase the pleasure taken by the Cultivator in his favorite pursuit, affording great interest until the perfect flower crowned his anticipations. It would probably be tedious to the reader were I to enumerate the technicalities of the leaves of any of the varieties, but he may be assured that what appears dry on paper is highly interesting when read from the book of nature and studied with the plants themselves. The growers of seedling pinks can by constant observation pretty well decide which plants are likely to turn out good flowers—from the foliage, or grass as they technically term it, thus all with broad and thick foliage are rejected while such as have narrow leaves and those not superabundant are preserved. The same rule however does not hold with Carnations; and this knowledge where perhaps not more than one in fifty seedlings is good for anything, saves much trouble and labor. The leaves of the different species of Camellia vary much more than is generally supposed by those who have not compared them together, and the cultivator of the Dahlia cannot but have observed the varieties of foliage which add lustre and brilliancy to the charms of this favorite flower. The study of this part of the vegetable kingdom is of much more use still, indeed is absolutely necessary to enable any one to distinguish the Trees of the forest, and especially to discriminate between the species belonging to the different genera. I cannot call to mind how many varieties of the Oak are natives of America. Most of them are described by Michaux, and the quality of their timber differs considerably; a knowledge of the form and size of their leaves is by far the readiest means of recognizing them —so with the Maple, Elm and other trees whose flowers or fruit are too small, inconspicuous or evanescent to afford evident marks of distinction.

To the Botanist a perfect knowledge of foliage is indispensable,

particularly in the examination specimens in the herbarium, and the Medical student in this country, where the roots and foliage of indigenous plants are in considerable use, should certainly be well informed on the subject. The artist who is desirous of attaining to something more than mediocrity in his profession, can of course not neglect this study, for he may easily be betrayed into the error of giving to his landscape trees either not indigenous in the place he wishes to represent, or depict them with forms unauthorized by nature.

The entomologist likewise should become acquainted with the the leaves of the plants on which the various insects he studies feed.

Thus without wishing to attach undue importance to a minute knowledge of the leaves of trees and plants, or to recommend the study of it as being combined with more pleasure and interest than it actually possesses, it appears evident that the value of an habitual acquaintance with foliage almost equals that of an habitual acquaintance with flowers.

Art. II.—*On the Cultivation of Heliotrope. (Heliotropium peruvianum.)* By F. F. Ashford.

Heliotropium peruvanium, or Peruvian Turnsole, is an ornamental trailer of Peru, whence it was introduced in the year 1757. The generical name was given by Linnæus, from *Helios*, the sun, and *trope*, turning: in allusion to the flowers being always turned toward the sun. Both Pliny and Dioscorides, assert the same reasons as its Swedish author. It belongs to Pentandria Monogynia. Nat. Ord. Borragineæ.

This production of the Peruvian clime, is well worthy of cultivation; its delightful fragrance, and (by the following management) long continuance in flower, will repay any occasional care or extra attention bestowed upon the plants. I have very often seen them grown and treated in a similar manner to greenhouse plants, but when treated in this manner, I always notice leafless, sickly-looking plants. Upon close application to the culture of the Heliotrope, in common with others, I find the following method to answer best, and produce as fine flowering plants as any I ever see. Such being

the case, I humbly present the particulars of the same for your numerous correspondents and readers.

Propagation.—Cuttings must be procured about the latter end of February or beginning of March, planted in pots of rich garden soil, and plunged in a working Cucumber or Melon frame. When the sun is powerful, that part of the light where the pots are under, must be covered with something to shield them from the overpowering heat of the solar rays. Water must be given when required, and all mouldiness, decayed leaves, &c. should be removed as they appear: for if suffered to remain, they will probably injure the whole. In two or three weeks, the cuttings will be sufficiently struck for potting: but, previously to so doing, remove them to an airy part of the stove for a few days, to harden. If a succession of flowering plants for the autumn and winter months are required, more cuttings may be put in during May and June. If any plants are wanted for turning out into the flower garden in summer, cuttings must be struck in September for that purpose.

Cultivation for Flowering in Pots.—Provide for a good compost equal quantities of maiden loam, rotten horse-dung, and sandy peat; a little leaf mould might also be added. The whole should be well chopped and incorporated together, after having been ameliorated by the frost and atmosphere of the preceding winter, but should not be sifted. When the cuttings have been in the stove for a few days, pot them off into fortyeight-sized pots, using the above compost, and allowing as much soil to adhere to the roots as possible. Pinch off the extremities of each shoot, to cause the plants to grow bushy; and after giving them a suitable watering, place them in a shady part of the stove till they have taken root and begun to grow, when they should be removed to a more exposed situation in a house of the temperature of from 60° to 70° Fahrenheit. Due attention must be paid to repotting them as often as they appear to mat around the outside of the balls, or the plants will soon assume a sickly hue, instead of being clothed with fine green foliage. These plants are very subject to the attacks of that destructive inmate of the hot house — that pest to gardeners — the green fly, *(aphis.)* These should not be permitted to remain, but be eradicated as soon as perceived, by syringing them every morning with pure water. If the plants are removed, when in bloom, to the greenhouse or conservatory, they will continue in flower much longer

than when remaining in heat. When they have done flowering set them in a cool part of the greenhouse until the following February, when they should be cut down, their balls reduced, themselves repotted in the above soil, and plunged in a hot bed, to produce healthy young shoots for propagation; after which, the old stools may be either turned out into flower borders, or thrown away, as young plants raised every year are far more preferable for flowering in pots.

Cultivation for Flower Borders. — After cuttings are struck, let them be potted off in the same sized pots and sort of soil as above noticed, and wintered in the greenhouse or in a house. In the following March, put them into pots a size larger, to cause them to produce fresh shoots and roots. Towards the middle of April, begin to expose them gradually to the open air; so that about the end of May, if the weather prove mild, they may be able to bear being planted out in beds or baskets, composed of good mellow, rich soil. Should cold nights happen after they have been turned out, as is sometimes the case, they must be defended by means of hoops and mats, or canvass; thus protected, they will grow and flower freely, till the chilly nights of autumn put a check to their vigor: they must then be taken up with their balls entire, and potted in suitable sized pots. If placed in the stove and shaded for a few days, they will continue to flower till Christmas, when a few, cuttings may be taken off for early propagation, and the old roots thrown away.

I have thus endeavored, in as short a space as possible, to pen down my process; and I do not hesitate to say, that it will, after a fair trial, satisfy every grower of this native of the Peruvian shores. —*Flor. Cab.*

Art. III.—*British Agriculture.* By Dr Humphrey.

I have spoken already, in general terms, with a little of that enthusiasm, perhaps, which first impressions are apt to beget, of the moral beauties and high cultivation of England, and parts of Scotland. A glance, in July or August, from a few of the thousand eminences which invite your steps, is sufficient to convince you,

that the prodigious agricultural resources of the country are developed, with extraordinary industry, skill and success. But these enchanting glimpses, are too rapid and indefinite, to afford any satisfactory data, from which to calculate the gross produce of the island. You want to sit down in your closet, with such statistics, as may be gleaned from the reports of Parliamentary committees and other authentic documents, and by the help of these, to make out a condensed abstract, embracing all the items, which go to swell the vast aggregate of British agricultural production. For brevity's sake, I shall include what I have to say of the agriculture of Scotland, under the present general head, although most of the estimates will have more special reference to England and Wales.

It is the opinion of competent judges, that the advances made in the agriculture of Great Britain during the last *seventy* or *eighty* years, are scarcely exceeded by the improvement and extension of its manufactures, within the same period; and that to these advances, no other old setttled country furnishes any parallel. That they have been very rapid, indeed, the following figures and comparisons abundantly show. In 1760 the total growth of all kinds of grain in England and Wales, was about 120,000,000 of bushels. To this should be added, perhaps 30,000,000, for Scotland — making a grand total of 150,000,000. In 1835, the quantity in both kingdoms, could not have been less than 340,000,000, of bushels. In 1755, the population of the whole island, did not much, if any, exceed 7,500,000. In 1831 it had risen to 16,525,180, being an increase of 9,000,000, or 120 per cent! Now, the improvements in agriculture, have more than kept pace with this prodigious increase of demand for its various productions; for it is agreed on all hands, that the 16,500,000, or rather the 17,500,000, (for more than a million have been added since 1831,) are much fuller fed, and on provisions of a far better quality, than the 7,500,000 were, in 1755. Nor is Great Britain indebted at all, at present, to foreign markets for her supplies. Since 1832, she has imported no grain worth mentioning, and till within the last six months, prices have been so exceedingly depressed, as to call forth loud complaints from the whole agricultural interest of the country. England is at this moment, so far from wanting any of our bread-stuffs, if we had them to export, that she has been supplying us all winter liberally from her own granaries, and according to the latest advices, she has still

bread enough and to spare. Again, it is estimated by British writers, of high authority, that the subsistence of 9,000,000 of people costs, in raw produce, not less than £72,000,000, or £8 for each individual per annum. According to this estimate, the annual product of this great branch of national industry is $350,000,000 more, at present, than it was in 1755; which is more than twice the value of the whole cotton manufacture of the country, in 1831. Now if it costs $350,000,000, to feed the increased population of 9,000,000, then to feed the present population of 17,500,000, must cost near $700,000,000! What an amazing agricultural product, for so small a territory! And yet, it is the opinion of practical men of the highest respectability in England, that the raw produce of the island, might be well nigh doubled, without any greater proportional expenses being incurred in its production. That is to say, 35,000,000 of people might draw their subsistence, from that one little speck in the ocean! Now *we* have a territory more than fifteen times as large as the island of Great Britain; and what should hinder it, when it comes to be brought under no higher cultivation than some parts of England and Scotland, from sustaining a population of *five*, or *six* hundred millions of people? This would give to Virginia something like *thirty* millions — to Illinois and Missouri about the same number each — to New York near *twentyfive* millions, and so in proportion to the other States. I am quite aware that this estimate will be regarded as extremely visionary and incredible, by many of your readers; but not more so, than it would have been thought, in the middle of the last century, that England, Scotland and Wales could ever be made to sustain thirtyfive, or even thirty millions.

Among the causes which have more than doubled the agricultural produce of Great Britain, within the period just alluded to, may be mentioned the enclosing of six or seven millions of acres of commons and common fields, by which their annual product has been increased, in many cases, more than tenfold — the cultivation of heaths and other waste lands — the redeeming of extensive and inexhaustibly rich fens, from the possession of aquatic birds and animals — the great improvement in agricultural implements — the furrow draining of clay and other cold and stiff soils — the better rotation of crops — the extensive introduction of turnips and clover — the immense increase of common manure, and the introduc-

tion of one at least, whose extraordinary nutritive qualities have but recently been discovered. Next to wheat, the turnip crop, which forty years ago was hardly worth mentioning, is now more valuable than any other, both to landlords and tenants. It is used chiefly in feeding and fattening cattle and sheep; and while immense numbers of both are kept in the most healthy and thriving condition upon this vegetable, one species of which, the Ruta Baga, has lately been introduced and is extensively productive, the lands are greatly enriched and soon prepared for any other crop, which the farmer may find most profitable in his system of rotation. Clover, too, is doing much to enrich the soil of England and Scotland, and to reward the labors of those who moisten it with the sweat of their brows. It is surprising to see, to what an extent the light, sandy lands of England have already been redeemed from comparative sterility under this cultivation, and are now sowed with the finest wheat. The process is still going on, and bids fair to proceed as long as there remain any such lands to be reclaimed and enriched. Indeed, who can tell how much the cultivation of the turnip may ultimately add to the wealth, and help to sustain the population of Britain. According to an estimate which I have lately seen, it is now worth *many millions* sterling, per annum, to the single county of Norfolk. *Carrots*, also, are found to be a very profitable crop in some parts of England, and the farmers are turning their attention to the cultivation of this very nutritious esculent, with increasing interest and advantage.

Among the several kinds of manure, which have long been in high repute, lime and marl are inexhaustible; particularly the former, which the low price of coal brings at a cheap rate. On some soils, and near the kilns, it is used in great quantities. I have seen fields covered with it, just as ours are with barn manure; and when it is spread, the ground appears, at a little distance, as if it were covered with snow.

But the richest and most profitable kind of dressing which has yet been tried, and which is a new source of agricultural wealth to Great Britain, is *bone manure*. It began first to be used, on a large scale, in Yorkshire and Lincolnshire, where its influence has been all but miraculous! Extensive tracts of country, which a few years ago were mere wastes, occupied by rabbit warrens, have been converted into some of the finest and best managed farms in England

This signal improvement, though it did not begin, has been carried to its present perfection, by the use of the manure just mentioned. Since bone dust has come into general use, the turnip crop has been increased in many instances, *ten* fold, and in few less than *four* or *five* fold, and the effect has been equally surprising upon the succeeding crops of grain, on the same land. This is the testimony of practical men, well acquainted with all the circumstances, and they have no doubt that the soil will go on progressively improving, and requiring a less quantity of bones, annually, from its increased fertility and power. It answers best on light chalky soils. A single farmer in Lincolnshire, is said to have generally about six hundred acres dressed, almost entirely with bone manure, furnishing a vast supply of food for cattle, and of common manure for other lands, and is fitting those on which it is sown for bearing the most luxuriant crops of wheat and barley.

In Scotland, the use of bone manure is still more recent, but scarcely less productive. In the Lothians, in Berwickshire, and in fact, everywhere, it is working wonders. Being so light and easily transported, compared with any other kind of manure, many a rugged and hilly tract is fertilized by it, which must otherwise have remained in a state of nature. To pulverize the bones, mills are constructed in the vicinity of all the large towns, and besides what their own markets furnish, large quantities of bone dust are imported by the Scotch farmers.

I am almost ashamed to offer your readers this brief and meagre sketch of the present state of British agriculture; but neither time nor space will permit me to enlarge. There are limits, no doubt, beyond which improvements in cultivating the soil, cannot be carried. But there is no reason to think, that these limits have yet been approached, even in the most productive districts of England and Scotland — for the science of agriculture never advanced more rapidly than it has done within the last few years; or rather, I should say, were I entitled to speak with any authority on the subject, it seems to be almost in its infancy. Who that looks at the astonishing improvements of the last fifty years, both in the science and the art of husbandry—who that recollects how lately the potato, that most rich, nutritious and productive of all our farinacious esculents, has been brought into general use — who that considers what inexhaustible sources of nutrition and fertility and wealth, the

turnip and other green crops have so recently become in Britain, will undertake to say, that other vegetables, still more nutritious and productive, may not yet be introduced and brought under general cultivation? Who can tell, what new substances scientific and practical agriculturalists may yet find, possessing far higher fertilizing virtues, than any now in use, or what combinations and mixtures chemistry may furnish, so cheap and so abundant, as to put a new aspect of fertility upon lands already most productive? Who, in looking at the best acre in all England, would venture to say, that it can never, by any possible improvements and discoveries, be made more productive of human sustenance than it now is? Who knows, but that a hundred, or a thousand years hence, it may yield four fold? Who, in short, can even conjecture, what amazing undeveloped agricultural resources yet lie hidden in lands, which have hitherto been regarded as scarcely worth tilling at all? For myself, I do not deem it at all extravagant to predict, that in the millenium, if not before, the single island of Great Britain will produce food enough for a population of *fifty* millions; nor, that when swords shall be beaten into plough shares, and spears into pruning hooks, and instead of the thorn shall come up the fir-tree, and instead of the briar shall come up the myrrh-tree, the present territory of the United States will pour the boon of plenty in the laps of a *thousand million of inhabitants!* Yours, sincerely.

Art. IV.—*Effects of Cultivation—Curious Facts.*

The history of some of our commonest agricultural and horticultural products, furnishes a useful lesson respecting the beneficial effects of careful cultivation. The husbandman may read, in the case of the Potato particularly, not merely the effects produced by accident in the introduction of useful plants, but the vast improvement resulting from judicious culture.

The speech of Col. Knapp, in delivering the premiums awarded by the American Institute to individuals residing in Newark, embraced many curious facts, which will probably be read with profit by intelligent farmers. We quote a few paragraphs:

"Every thing in this country," said he, "has been brought forward

by protection. In this bleak clime, but few of the sustaining fruits of the earth were here indigenous, or in a perfect state. Even the Indian corn, so often considered as native here, was with difficulty acclimated. It was brought from the south, and by degrees was coaxed to ripen in a northern latitude. The aborigines who cultivated it, taught the pilgrims how to raise it; they plucked the earliest ears with the husk, and braided several of them together, for the next year's seed, and their care was rewarded by an earlier and surer crop.

"The pumpkin, brought from Spain, was first planted in Rawley in Massachusetts, and it was several years before it came to a hard, knotty shell, which marks the true yankee pumpkin, such as are selected for the golden pies of their glorious thanksgiving festival.

"Our wheat was with difficulty acclimated. That brought from the mother country had grown from spring to fall, but the season was not long enough here to ensure a crop. It was then sown in the fall, grew under the snows in winter, and catching the earliest warmth of spring, yielded its increase by midsummer.

"Asparagus, which is now the delight of all as an early vegetable, and for which several millions of dollars are paid our gardeners yearly, is of late culture in this country. At the time of the revolution, asparagus was only cultivated on the seaboard; this luxury had not then reached the farmer of the interior.

"The history of the potato is a singular one. Rees' Encyclopædia states that the potato was brought from Virginia, by Sir Walter Raleigh, to Ireland. The writer should have said from South America, in the latter part of the sixteenth century. He had no idea of its ever being used as an esculent, at that time. It was pointed out to him as a beautiful flower, and its hard, bulby root was said, by the natives, to possess medicinal qualities. He took it to Ireland, where he had estates, presented to him by queen Elizabeth, and planted it in his garden. The flower did not improve by cultivation, but the root grew larger and softer. The potato in its native bed was a coarse ground nut. The thought struck the philosopher to try the potato as as an edible, and boiling and roasting it, found it by either process excellent. He then gave some of the plants to the peasantry, and they soon became, in a measure, a substitute for bread, when the harvest was scanty.

"The potato was successfully cultivated in Ireland, before it was

thought of in England; it grew into favor by slow degrees, and was so little known when our pilgrim fathers came to this country, that it was not thought of for a crop in the New World. It would have been an excellent thing for them, if they had been acquainted with the value of the potato. It was not until 1719, that the Irish potato reached this country. A colony of Presbyterian Irish, who settled in Londonderry, in New Hampshire, brought the root with them. These people found their favorite vegetable flourished well in new grounds. By degrees, their neighbors came into the habit of raising potatoes; but many years elapsed before the cultivation of them was general among the yeomanry of this country. Long after they were cultivated in New England, they were held in contempt, and the master mechanic often had to stipulate with his apprentice, that he should not be obliged to eat potatoes. An aged mechanic once informed me, that he raised nine bushels, having at that time (1746) a dozen apprentices, but did not venture to offer them a boiled potato with the meat, but left them in the cellar for the apprentices to get and roast as they pleased; he soon found that he should not have enough for seed, and locked up what was left. The next year he raised the enormous quantity of thirty-six bushels; the neighbors stared—but his boys devoured them during the following winter.

"About this time some of the gentry brought this vegetable on their tables, and the prejudice against them vanished. Thus, by degrees, a taste for this food was formed, never to be extinguished. The cultivation of the potato is now well understood—a crop ameliorates, instead of impoverishing the soil, and the culture can be increased to any extent. Thus, by the curiosity of one lover of nature, and his experiments, has a humble weed been brought from the mountains of South America, and spread over Europe and North America, until it is emphatically called 'the bread of nations.' Still the country from whence it was taken, has been too ignorant or superstitious to attempt its cultivation, until within a few years. Now, the lights of science are chasing away the long, deep shadows of the Andes.

"Rice was brought from India in 1721, and cultivated by way of experiment in South Carolina. It succeeded well, and was, for many years, the staple article of the State. It seems strange, but it is not more strange than true, that a vegetable should have a moral

and religious influence over the mind of men. Brahma could never have enforced his code of religious rites, with an hundred incarnations, if India had not abounded in the rice plant. His followers would have become carnivorous, notwithstanding all the rays of his glory, and the awful exhibition of his might, if he had not driven the animals away, and secured the vegetable kingdom for his worshippers. Man is, in spite of his philosophy, a creature of the earth —and in a common measure, like the chameleon, takes the hues of his character from his position, and his food.

"The cotton plant was at first cultivated as a flower in our gardens, and a beautiful flower it is. This plant alone has made a revolution in the finances of the world. Look at the growth and consumption of it in the United States, and the immense manufacture of it in England, where it cannot be grown, and you will find my assertion true in its most extended sense.

"Until our purchase of Louisiana, this country was indebted to the East and West Indies for sugar. In the country—the thirteen United States—sugar and molasses were made in small quantities, from corn stalks, sweet apples, pumpkins, and maple sugar trees; but all put together, furnished but a small part of the sugar demanded by the great mass of people. Our people are fond of saccharine, or sweetening to use our peculiar term for it.

"The corn stalk, the pumpkin, and the sweet apple, are given up for sugar or molasses—and the maple tree is falling before the axe, and we must rely on the sugar cane alone, unless we can substitute, as in France, the sugar beet. The culture of the sugar beet has been commenced with us, and probably will be successful."—*Genesee Farmer.*

ART. V.—*On the Management of the Double Flowered Pomegranate*, Punica Granatum Multiplex. By Mr. DAVID WHALE, Gardener, Winchester.

THE Pomegranate is an old inhabitant of our gardens, but it seems to have been known to the Africans for many ages before it came into our possession; it is mentioned in holy writ, as being in the possession of the Egyptians more than 3000 years ago; it is a na-

tive of the South of Europe, and North of Africa. Dr. Sibthorp, informs us, that it is found plentiful in Greece, both in a wild and cultivated state; it was introduced into this country about the year 1548. The double flowering kind is much more esteemed than the other in this country, for the sake of its large fine double flowers, which are of a most beautiful scarlet color; and if the trees are well managed, and supplied with due nourishment, they will continue to produce flowers from four to five months successively, which renders it one of the most valuable flowering trees; this sort may be rendered more productive of flowers, by grafting it upon stocks of the single kind, which check the luxuriancy of the trees, and cause them to produce flowers upon almost every shoot. There have been various ways recommended to manage the pomegranate, so as to make it flower freely, and forty years' experience has taught me what I conceive to be the most successful method. I do all my pruning in the summer season, training the branches at a regular distance, of about four inches apart, in the same way as I train a plum tree; towards the latter end of June I look over the trees, and remove all the shoots that are running to wood, at which time they are young and tender, and are easily removed without the assistance of a knife. Care must be taken to leave all blossom shoots and spurs, these are easily distinguished from wood shoots; this I do about three times during summer, and by this treatment the tree continues to flower four or five months, making a very grand appearance, and repaying by its beauty for every care a gardener can bestow.

P. S. The knife should never be used about these trees in winter, except to remove decayed branches, &c. They are easily propagated by layers or cuttings. To accomplish the first: in March, select some of the young branches for the purpose, give a little slit at a bud underneath, they will easily strike root without slitting, and I consider that method to be the safest; lay them in the usual way, water them occasionally during the summer, and by the following autumn they will be well rooted so that they may be taken off and removed to any warm situation, to gain strength, before they are planted where they are to remain.

Cuttings.—If cuttings are required in June, take some young tops of branches, select a warm place in the garden, place them under a hand-glass, shade them in hot weather, and by autumn they will have taken root.—*Floricultural Cabinet.*

Art. VI.—*Trillium Erectum.*

We have been politely favored by Col. S. Dwight, of Thomaston, Maine, with a living plant of Trillium erectum, brought from that place, of such extraordinary luxuriant growth, that we feel pleasure in recording its appearance and dimensions in our Magazine. From one root rise three flower stems full 12 inches high, each crowned by a flower of a deep, rather dull, amaranth color, very dark and distinct veins, the single petals of which exceed 2 inches in length, thus forming a corolla of 12 inches circumference — the three rhomboidal green leaves from the centre of which the flower rises are each 4 1-2 inches long by 4 broad :— it is a truly magnificent plant of the tribe; and the gentleman who has taken the trouble to bring it so far is entitled to our warmest thanks; we have placed the plant in hands where it is highly valued and will be sedulously taken care of.* A figure of Trillium pictum (Erythrocarpum of Michaux,) may be found at page 241 of the first volume of our Register, which will give some idea of the form of this genus. We should like to see a more frequent exhibition of this zeal in bringing into notice the beautiful plants with which our native country abounds. A garden where these could be assembled and cultivated in abundance, with due attention to their various habits, would be the pride of the city in whose vicinity it existed, as well as the delight of many European travellers to whom the plants in the American departments in the celebrated garden of their own countries are objects of the greatest interest.

It will give us great pleasure to receive plants of the Orchis, Cypripedium, Trillium, Cymbidium, Arethusas, or any of the other beautiful indigenous tribes which abound in many parts of our own country, promising to give them a faithful description, and place them in hands where they will be duly appreciated.

They may be taken up when in flower with a ball of earth and placed in boxes, covering the surface with wet moss, and binding it on with bass strings or twine, and tying the flower stem to a small stick. J. B.

* Those which are found in this neighborhood are seldom more than half this size.

ART. VII.—*Heart's-Ease. Viola tricolor. Violæ. Syngenesia monogynia.*

French, herbe de la Trinité ; pensées [thoughts].—*Italian*, flammola [little flame] ; viola farfalla [butterfly violet] ; viola segolina [winged violet] ; flor della Trinita ; suocera e nuora [mother-in-law and daughter-in-law]. The Greeks have named it phlox [a flame.]

THIS beautiful flower is a native of Siberia, Japan and many parts of Europe. Mr Brooke, speaking of the forests in Sweden, says, "innumerable flowers of the liveliest colors peeped out between the masses of brown rock, enamelled with various kinds of lichens; and huge fragments were variegated with beds of the Pansy, or Heart's-ease, displaying its different hues, relieved by the dark green of the sweeping pines.*" It is a general favorite, as might be supposed from the infinity of provincial names which have been bestowed upon it from its beautiful colors :—

Love in Idleness.	Jump up and kiss me.
Live in Idlenes.	Look up and kiss me.
Call me to you.	Kiss me ere I rise.
Cull me to you.	Kiss me behind the garden-gate.
Three faces under a hood.	Pink of my John.
Herb Trinity.	Flower of Jove.

And flamy, because its colors are seen in the flame of wood.

It is a species of violet, and is frequently called the Pansy-violet, or Pansy, a corruption of the French name, *pensées*.

The smaller varieties are scentless, but the larger ones have an agreeable odor. Drayton celebrates its perfume by the flowers with which he compares it in this respect ; but then, to be sure, his is an Elysian Heart's-ease :

"The Pansy and the violet, here,
As seeming to descend
Both from one root, a very pair,
For sweetness do contend.

"And pointing to a pink to tell
Which bears it, it is loth
To judge it ; but replies, for smell
That it excels them both.

* Brooke's Sweden p. 54.

"Wherewith displeased they hang their heads,
So angry soon they grow,
And from their odoriferous beds
Their sweets at it they throw."

The Heart's-ease has been lauded by many of our poets; it has been immortalized even by Shakspeare himself; but no one has been so warm and constant in its praise as Mr Hunt, who has mentioned it in many of his works. In the Feast of the Poets, he entwines it with the Vine and the Bay, for the wreath bestowed by Apollo upon Mr T. Moore. In the notes to that little volume, he again speaks of this flower, and I do not know that I can do better than steal a few of its pages to adorn this.

"It is pleasant to light upon an universal favorite, whose merits answer one's expectation. We know little or nothing of the common flowers among the ancients; but as violets in general have their due mention among the poets that have come down to us, it is to be concluded that the Heart's-ease could not miss its particular admiration, — if indeed it existed among them in its perfection. The modern Latin name for it is *flos Jovis*, or Jove's flower, — an appellation rather too worshipful for its little sparkling delicacy, and more suitable to the greatness of an hydrangea or to the diadems of a rhododendron.

'Quæque per irriguas quærenda Sisymbria valles
Crescunt, nectendis cum myrto nata coronis;
Flosque Jovis varius, folii tricoloris, et ipsi
Par violæ, nulloque tamen spectatus odore.'

RAPINI HORTORUM, lib. i.

'With all the beauties in the vallies bred,
Wild mint, that's born with myrtle crowns to wed,
And Jove's own flower, that shares the violet's pride,
Its want of scent with triple charm supplied.'

"The name given it by the Italians is *flammola*, the little flame; —at least, this is an appellation with which I have met, and it is quite in the taste of that ardent people. The French are perfectly *aimable* with theirs: —they call it *pensee*, a thought, from which comes our word Pansy:—

"'There's rosemary,' says poor Ophelia; 'that's for remembrance; — pray you, love, remember; — and there is pansies, — that's for thoughts.' Drayton, in his world of luxuries, the Muse's Elysium, where he fairly stifles you with sweets, has given, under this name of it,

a very brilliant image of its effect in a wreath of flowers; — the nymph says,

'Here damask roses, white and red,
Out of my lap first take I,
Which still shall run along the thread;
My chiefest flow'r this makes I.
Amongst these roses in a row,
Next place I pinks in plenty,
These double-daisies then for show;
And will not this be dainty?
The pretty pansy then I'll tye,
Like stones some chain enchasing;
The next to them, their near ally,
The purple violet placing."

NYMPHAL, 5th.

"Milton, in his fine way, gives us a picture in a word,

——————— "the pansy *freak'd* with jet."

"Another of its names is Love-in Idleness, under which it has been again celebrated by Shakspeare, to whom we must always return, for anything and for everything; — his fairies make potent use of it in the Midsummer-Night's Dream. The whole passage is full of such exquisite fancies, mixed with such noble expressions and fine suggestions of sentiment, that I will indulge myself, and lay it before the reader at once, that he may not interrupt himself in his chair :—

OBERON. My gentle Puck, come hither:—thou rememberest,
Since once I sat upon a promontory,
And heard a mermaid, on a dolphin's back,
Uttering such dulcet and harmonious breath,
That the rude sea grew civil at her song,
And certain stars shot madly from their spheres
To hear the sea-maid's music?

PUCK. I remember.

OBERON. That very time I saw (but thou couldst not,)
Flying betwixt the cold earth and the moon,
Cupid all arm'd: — a certain aim he took
At a fair vestal, throned by the west,
And loosed his love-shaft smartly from his bow,
As it should pierce a hundred thousand hearts:
But I might see young Cupid's fiery shaft

Quench'd in the chaste beams of the watery moon;
And the imperial votaress pass'd on,
In maiden meditation, fancy free.
Yet mark'd I where the bolt of Cupid fell:
It fell upon a little western flower,—
Before, milk-white, — now purple with love's wound,—
And maidens call it Love-in-idleness.
Fetch me that flower,—the herb I show'd thee once:
The juice of it, on sleeping eyelids laid,
Will make or man or woman madly dote
Upon the next live creature that it sees.
Fetch me that herb; and be thou here again
Ere the leviathan can swim a league.

PUCK. I'll put a girdle round about the earth
In forty minutes.

Act II. Sc. 2.

"Besides these names of Love-in-idleness, Pansy, Heart's-ease, and Jump-up-and-kiss-me, the tri-coloured violet is called also, in various country places, the herb Trinity, Three-faces-under-a-hood, Kiss-me-behind-the-garden-gate, and Cuddle-me-to-you, which seems to have been altered by some nice apprehension into the less vivacious request of Cull-me-to-you.

"In short, the Persians themselves have not a greater number of fond appellations for the rose, than the people of Europe for the Heart's-ease. For my part, to whom gaiety and companionship are more than ordinarily welcome on many accounts, I cannot but speak with gratitude of this little flower, — one of many with which fair and dear friends have adorned my prison-house, and the one which outlasted all the rest."

Mr Hunt again mentions this flower with great praise in his Descent of Liberty; where, after sketching in vivid colors a number of beautiful flowers, he thus finishes the floral picture:

"And as proud as all of them
Bound in one, the garden's gem,
Heart's-ease, like a gallant bold,
In his cloth of purple and gold."

In his enumeration of the flowers in blossom, in his History of the Months, too fond of the Heart's-ease even to name it without a passing commendation, he calls it the Sparkler; a name which it so truly deserves, that it might well be added to those it now bears; in which it already surpasses a Spanish grandee.

Herrick plays upon its name of Heart's-ease;

"Ah, cruel love, must I endure
Thy many scorns, and find no cure?
Say, are thy medicines made to be
Helps to all others but to me?

I'll leave thee, and to pansies come;
Comforts you'll afford me some:
You can ease my heart, and do
What love could ne'er be brought unto."

If the poet means to play upon the word pansies also, he was surely singularly fortunate, that when love frowned upon him, his *thoughts* should give him so much comfort. He tells us the origin of another of its names:

"It was at the noon-tide hour
A lady reposed in a bower,
Where shaded between
The branches of green,
Blossomed and blushed a fair flower;
Not a pinion was moved, nor a breeze was heard,
As with curious hand the lady stirred
The leaves of this unknown flower.

She saw in its cradling bloom
A cherub with folding plume,
And a bow unstrung,
And arrows, were flung
O'er the cup of this opening flower:
And the lady fancied she much had need
Of the light of wakening eyes to read
The name of this unknown flower.

She placed it too soon to her breast,
And the cherub was charmed from his rest;
Then he winged a dart
At the lady's heart,
From the leaves of this treacherous flower.
Ah, cruel child! said the lady; I guess,
Too late, that *Love-In-Idleness*
Is the name of this unknown flower."

Spenser includes the Heart's-ease among the flowers to be strown before Queen Elizabeth;

"Bring hither the pink and purple columbine,
With gilliflowers;
Bring coronations and sops-in-wine,
Worn of paramours.

Strow me the ground with daffadowndillies,
And cowslips and king-cups, and loved lilies;
The pretty pawnce,
And the chevisaunce,
Shall match with the fair floure-de-lice."

Pansies make a part of the wreaths brought by the grateful shepherds to the nymph Sabrina,

"That with moist curb sways the smooth Severn stream.
* * * * *
* * * * *
——— the shepherds at their festivals
Carol her goodness, loud in rustic lays,
And throw sweet garland wreaths into her stream
Of pansies, pinks, and gaudy daffodils."

"The delicacy of its texture, and the vivacity of its purple, are inimitable," says the Countess, in *le Spectacle de la Nature*. "The softest velvet, if set in competition with this flower, would appear to the eye as coarse as canvass."

Yet, in another part of this work, the same flower is represented as an humble one which makes no figure, but diffuses an agreeable odor.

It has already been observed, that only the larger kinds have any scent; thus many persons, judging from the smaller, have thought them all scentless. The difference of opinion on this point may be seen in several of the above quotations.

Dryden, in his translation of a passage in Virgil's Pastorals where the poet speaks of sweet herbs in general, introduces the Pansy; but expressly to distinguish it from a fragrant plant:

"Pansies to please the sight, and cassia sweet to smell."

There is a species of Heart's-ease called the Great Flowering — a native of Switzerland, Dauphiny, Silesia, and the Pyrenees —

which is very similar to the common kind, but that it has more yellow in it; and another, called the Yellow Mountain Heart's-ease, of British growth, which, notwithstanding the name it bears, is as often purple and yellow, or even purple alone, as all yellow.

It would be an impertinence to attempt to describe the Heart's-ease; therefore let us proceed at once to the treatment of this little favorite. The roots may be purchased so cheaply, and the flowers of these will be so much finer than any that are sown at home, that this will be much the best way of procuring them. At a nursery, or at Covent Garden flower-market, six or more may be had for a shilling, all of them covered with flowers and buds. They love the sun, but must be liberally watered every evening to replenish the moisture, which it will consume.

It is said somewhere that the Heart's-ease is sacred to Saint Valentine. It must be confessed to be a choice worthy of that amiable and very popular saint; for the flower, like love, is painted in the most brilliant colors, is full of sweet names, and grows alike in the humblest as well as the richest soils. Another point of resemblance, too, may be added, that where once it has taken root, it so pertinaciously perpetuates itself, that it is almost impossible to eradicate it. The poet Herrick tells us, too, that

> "Frolic virgins once these were,
> Over-loving, living here;
> Being here their ends denied,
> Ran for sweethearts mad, and died.
> Love, in pity of their tears,
> And their loss in blooming years,
> For their restless here-spent hours,
> Gave them heart's-ease turned to flowers."
>
> *Flora Domestica.*

Art. VIII. — *Culture of the Bletia Tankervilliæ.* By Mr Parkin.

The Bletia Tankervilliæ, one of the many beautiful productions of China, is an old inhabitant of British stoves, we, nevertheless, frequently witness unsuccessful attempts to cultivate this plant, so as to insure a fine show of its singular and beautiful flowers. When

properly managed, few plants present a more gay appearance when in flower; we have here one plant in a pot, twelve inches in diameter, which, in November last, threw up nine stems, each of which continued for three months to unfold a succession of its lovely flowers; we, therefore, flatter ourselves, that we have been tolerably successful, and consequently, venture to offer for the consideration of your readers and inquirers a few observations thereon; not, however, presuming to have it thought, that no other method would be equally successful. The plant in question, is one with many others (when growing in the limited space of a flower pot) that may be greatly injured by being overabundantly watered; any plants producing abundance of roots, naturally suggest the idea of requiring abundance of food: but here it becomes the duty of the cultivator to enquire, what that food should be.—Water, is with undoubted propriety considered to be the medium through which plants are supplied with food, and is generally applied with a liberal hand, to such as are provided with abundance of roots; with the Bletia Tankervilliæ, we may easily err; for although, as long as the soil is open and the pots well drained, a liberal supply of this element may be required, yet when the plants have attained about the maximum of their growth, the pots will have become crowded with roots to such a degree, as will very materially interrupt the passage of water through them; such being the case, water more sparingly, so as not to keep the roots in a constant state of saturation, and on the other hand, not suffering them to become absolutely dry; for though the plant is so tenacious of life as to be able to live for a considerable time, in either of those extremes, to succeed creditably both must be avoided. The compost we use, consists of equal parts of brown strong loam, peat, and leaf mould, with a moderate portion of broken pot; potting is regulated by the season of flowering, and may be performed immediately after the flowers are gone, when they are potted with balls entire; but when the plants are to be divided, it is better deferred until the young offsets have emitted their roots a few inches, they may then be carefully separated from the parent, and potted in pots of a smaller size. We have recovered unhealthy plants, by shaking them out of the pot, and washing every particle of soil from the roots, repotting them in the compost above named. —*Florieult. Cab.*

Art. IX.—*Calls at Gardens in the Vicinity of Boston.*

Mr S. Walker's, Roxbury.

Tulip Show.—Mr Walker has, at much expense and pains, got up a Tulip Show for which he merits the highest praise of the amateur florist, and all who are fond of flowers. It is the first exhibition among us, and it is hoped not the last. Why may we not have shows of flowers, as well as of every thing else? There is certainly nothing in them injurious to morals as in too many exhibitions, but on the contrary, something to improve. Let us have, then, more frequent displays of the kind; and it is to be hoped that in this instance such encouragement will be given, that we shall hereafter, have public exhibitions of florist's flowers of every description.

We have all heard of the great value attached to some of the varieties of the tulip in ages past; we have read that $10,000 have been refused for a single root, and no doubt some of us have had the curiosity to see flowers so highly estimated. The "tulip mania," like many speculations, almost equally ridiculous, in our own time, has passed away, leaving us to wonder at the folly of those engaged in it; but still the tulip is much prized, and some of the finer sorts are rated at a high price. The tulip, "Louis XIV.," stands highest priced in the Dutch catalogue, being marked at 120 guilders or about $60. This we were shown in Mr Walker's bed, but as it had not come fully into flower, could not judge of its merits. We noticed many very splendid tulips, and felt highly gratified with the exhibition. We can convey no correct idea to our readers by description without the aid of the artist, and will not therefore attempt it; they are things not to be described: they must be seen to have a just estimate of their beauty. To protect from heavy rains and high winds, and shade from the scorching sun, Mr Walker has erected a neat house 60 feet by 12. The top as well as the sides half way down is covered with canvass, which is rolled up or let down according to the state of the weather by means of cords and pulleys. The lower part of the sides is finished with neat green lattice work, forming a fine contrast with the white canvass. The bed of tulips is in the centre of the house, containing 100 rows with seven bulbs in each row; embracing about 200 varieties.

We found in the garden, among other beautiful flowers, the fin-

est collection of pansies we have ever seen; many of the varieties will compare well, with some of the fine sorts we have seen figured in the English periodicals; one called the "village maid," is very superior, with some other named sorts. These have mostly been raised from seed by the proprietor.

Garden of Mr Thomas Willot, Roxbury.

Mr Willot has taken the well known garden and green houses of Mr Lemist, for the purpose of supplying bouquets, fruit, plants, &c. It contains a choice collection of green house and other plants, which will afford bouquets in abundance at all seasons of the year, and what is more desirable to the epicure, a profusion of the finest grapes. One house, 70 feet long, is almost entirely devoted to grapes; the vines are very heavily laden with their rich clusters: we were informed that some of them would be fit for the table by the fourth of July; they appeared in remarkably healthful and flourishing condition.

Another house, of about the same dimensions, is devoted mostly to flowers. In this building we noticed a magnificent orange tree, with more than 200 of its large golden fruit. The collection of roses is not large but embraces some of the finest varieties cultivated. We had not time to take a close survey of the plants, but hope hereafter to give some account of them.

A third house, about 100 feet long, divided into two compartments, and finished in fine style, was erected the last season, to be devoted principally, to grapes. The young vines are in flourishing condition.

The appearance of the whole establishment, in the houses and open grounds gives good evidence of the industry and skill of Mr Willot, and we hope he will receive that patronage from the public which he merits.

Garden of Marshall P. Wilder, Esq., Hawthorn Grove, Dorchester.

We spent a few moments in admiring the splendid bed of tulips which this gentleman possesses. It contains 210 of the choicest varieties that could be obtained in England, and bloomed for the first time in this country the last season. It is probably one of the best

collections in America. Mr Wilder has not taken any particular pains in their cultivation, nor the precaution to shade them this year, yet we think the flowers generally are more perfect in their coloring than they were the last season. How Mr Wilder's and Walker's tulip beds compare with those in England, we have not the means to judge, but we cannot well conceive of their being much superior in that country. It was remarked, however, by a person who has seen some of the best collections in Europe, that the tulip does not come to that perfection here that it does in England—probably owing to our extremes of heat and cold. The tulip requiring a moderate, even temperature. Our powerful sun spoils the tulip, causing the colors to run, sometimes before the flower fully expands.

One of the most striking flowers in the open ground is the pansy; we found them here in great perfection, mostly seedlings, raised by Mr Wilder: some of them extra fine. We had not time to give but a passing glance at the numerous fine plants in this collection—we found the camellias had made a vigorous growth, and their foliage very luxuriant. J. B.

ART. X.—*List of New and Rare Plants.* Noticed since our last. From Foreign Works.

1. *Cratægus flava*, var. Lobata. — Rough barked Thorn, single fruited variety. Natural Order, Roseaceæ; Class, Icosandria; Order, Pentagynia. The original species produces its fruit in clusters, but in the present variety they are solitary. They are of a greenish yellow, slightly tinged with pale red at the end. The plant forms a compact spreading head. The bark splits very much like that of an elm tree. *Cratægus*, from *Kratos*, strength, alluding to the density of the wood.

2. *Cratægus oxyacantha*, Var. Oliveriana.—Hairy-leaved Black Hawthorn This variety of the common Hawthorn very much resembles the original species. Its berries are produced in large clusters, but are of a sloe-black color, producing a pretty appearance. It is stated that the plant is a native of Asia Minor.

3. *Gaillardia bicolor*, Var. Drummondii integerrima.—Two colored Gaillardia. Drummond's entire leaved variety. Compositæ; Syngenesia; Frustranea. This variety appears identical with Gail-

lardia picta, excepting all the leaves being entire. The fine large blossoms, more than two inches across, the large crimson disk, surrounded by a ray of fine yellow, produces a very showy appearance, and renders the plant well deserving a place in every flower garden. *Gaillardi*, in compliment to M. Gaillard de Marentonneau, an amateur botanist.

4. *Hippeastrum breviflorum.*—Short flowered Knight's Star Lily. Amaryllideæ ; Hexandria; Monogynia. Mr Tweedie found this very distinct species in the neighborhood of Buenos Ayres. The scape rises about three feet high, bearing an umbel of six handsome flowers. Each flower is about four inches across, white striated with red, and down the middle of the petal, at its lower part, is a stripe of yellow. It is a very handsome species, and well merits a place in every collection of liliaceous stove plants. It has bloomed at the Glasgow Botanic Garden.

5. *Lachenalia glaucina.*—Glaucous flowered. Asphodeleæ : Hexandria ; Monogynia. This very handsome species has been sent by Baron Ludwig from Cape of Good Hope to the Glasgow Botanic Garden. The scape rises near a foot high, producing a spike of numerous flowers. They are at first of a palish blue, changing, however, as they become older, to a rosy lilac. The perianth (calyx) is also colored, and prettily spotted with blue. There are two varieties of this plant, one having pale blue flowers, and plain leaves ; the other having lilac or rose colored flowers, and spotted leaves. *Lachenalia*, in compliment to W. de la Chenal, a Botanical author.

6. *Limnanthus douglassii.*—Mr Douglas's Limnanthes. Limnantheæ; Decandria; Monogynia. A native of California, from whence it was sent by Mr Douglas. The plant is annual, quite hardy, decumbent, stems growing ten or twelve inches long. The ends are crowded with numerous fragrant flowers, each about an inch across, much resembling in size and form the Nemophila grandiflora. A large portion of the flower is a deep yellow, the extremities of the petals being white. It blooms from June to August. *Limnanthes*, from *lumen*, a lake ; and *anthos*, a flower. The plant, probably, in its native habits growing by the sides of lakes, rivers, &c.

7. *Lobelia cardinalis;* var. *Milleri.*—Mr Miller's Lobelia. Lobeliaceæ. Pentandria ; Monogynia. A very handsome flowering variety, raised by Mr Evans, gardener to Mrs Batt, Newhall, Salis-

bury, Wiltshire. It is an hybrid between L. cardinalis and L. syphilitica. The plant is perennial, quite hardy, blooming from July to the end of the summer season. The stem rises three feet high, having a long raceme of flowers, of a lively purple color, darker up the centre of the petals. The plant deserves a place in every collection. Plants may be had at the public Nurseries. A number of very fine flowering hybrid Lobelias have recently been raised, and will be offered to the public this spring. They are highly ornamental, and great acquisitions to the flower garden. *Lobelia*, in compliment to M. Lobel, a celebrated botanical author and physician; he died in 1616.

8. *Lobelia polyphylla.*—Many-leaved. A native of Valparaiso, from whence it has been recently sent to this country, and bloomed in the Glasgow Botanic Garden. Mr Knight, of Chelsea, also possesses plants of this species. The plant is perennial, suffruticose, growing a foot high, branching, each producing a terminal raceme of flowers, of a deep blood purple color, producing a beautiful appearance. The plant ought to be in every flower garden.

9. *Menonvillea filifolia*, Three-leaved.—Crucifera. Tetradynamia; Siliculosa. A hardy annual plant, a native of Chile, from whence it appears to have been sent to the Imperial Botanic Garden, at St Petersburgh, and from thence sent to A. B. Lambert, Esq. Boyton House, Wiltshire, where it bloomed the last summer. The stems grow erect, about a foot high, each terminating in a longish raceme of flowers. The flowers are small, having very narrow petals, white. There are several other species of this genus, all natives of Chile. *Menonvillea*, in compliment to M. Thiery Menonville, an enterprising naturalist of France.

10. *Muscaria commutatum.*—Dark Purple Flowered Grape Hyacinth. A native of Italy and Sicily, where it grows frequent in the meadows. The flowers are produced in dense racemes about twenty in each, of a dark purple color. It is grown in the gardens of the Hon. W. T. H. Fox, Strangways, Abbotsbury Castle in Dorsetshire. The plant blooms in March and April. The flowers are scentless. *Muscaria*, from *moschos*, alluding to the order of the type.

11. *Nepenthus distillatoria.*—Distilling Pitcher Plant. This very singular plant is a native of the East Indies, and was introduced into this country in 1789. It was subsequently lost, but the late Dr Carey

gathered seeds of it near Bengal, on the Cirear Mountains, who sent some to Mr Cooper, of Wentworth. A very fine plant is now growing in the stove at Chatsworth, which has near fifty pitchers upon it. The plant has bloomed for eighteen months past. The flowers, which are numerous, are produced upon a raceme of eight or nine inches long.

12. *Oncidium lunatum*, Crescent-lipped.—Orchidaceæ. Gynandria; Monandria. This very neat flowering species bloomed in the collection of Messrs Loddiges', during the last summer. It is a native of Demarara. The spike rises about nine inches high. The flowers very much resemble those of O. Harrisoneanum. Each is about three quarters of an inch across. The labellum is white striped, with dark blood color. The other portion of the flower is yellow, spotted with brownish red.

13. *Pereskia aculeata.*—West India Goosberry. Cactaceæ; Icosandia; Monogynia; Synonym, Cactus Pereskia. This plant is an old inhabitant of our hot-houses, but seldom seen in bloom, often used as a stock, on which other kinds are inarched or grafted. The plant produces its flowers in a panicle of ten or more upon each. They are white, rather more than an inch across, and make a very pretty appearance. A fruit is produced much like a soft mellow Gooseberry. *Pereskia*, from N. F. Peireskin's, an amateur botanist.

14. *Spiranthus bracteosa.*—Long Bracted Lady's Traces. Orchidaceæ; Gynandria; Monandria. A stove herbaceous species of Orchideæ, belonging to the division Neottieæ. It was sent to Messss Loddiges' from St Catharines. The scape rises about a foot high, terminating in a spike of flowers. They are very small, of a pale yellow color. *Spiranthes*, alluding to the spiral manner that the flowers are produced in.

15. *Tropæolum brachyseras.* Short Spurred Indian Cross. We have already given some particulars respecting this pretty little plant, under the specific name Brachysema, which, by some mistake, we had so inserted it. It appears the proper specific title is now given. We introduce it in this place to correct the mistake.

16. *Tulbaghia violacea.*—Violet flowered. Liliacæ; Hoxandria; Monogynia. A native of Southern Africa. The scape rises about a foot high, producing an umbel of eight or nine flowers, of

a bright shining purple color. Each flower is about three quarters of an inch across. *Tulbaghia*, in compliment to M. Tulbagh, a Dutch Governor.

17. *Begonia octopetala*, eight petaled. Natural order, Begoníacæ. Linnæan class Monæcia. Order, Polyandrías. This is by far the finest flowering species that has yet been introduced into this country, the flowers are as large as those of a single Anemone; it was sent from Lima in 1835, by J. McLean, Esq., to the Botanic Garden, at Glasgow, where, in the hot-house, it bloomed in October and November, of 1836. It requires a very high temperature to bloom well. The root is tuberous, the plant does not produce a stem. The leaves are upon long foot-stalks a foot and a half long, the leaf is eight or ten inches long, cordate. The flowers are produced in corymbs, of a greenish-white color: the male blossoms are larger than the female: each of the former are two inches, or more across. *Begonia*, in compliment to M. Begon, a French promoter of Botany.

18. *Bolbophyllum barbigerum*. Bearded flowered. Orchidaceæ. Gynandria Monandria. A most singularly pretty flowering Orchideous Epiphyte Plant, which has bloomed in the collection of Messrs. Loddiges, at Hackney, in whose collection it bloomed during the last year; it was introduced from Sierra Leone. The flowers are produced upon a raceme of six inches in length, upon each are from sixteen to twenty flowers; the petals are very minute, scarcely perceptible; the lip is long, narrow, flexuose, closely covered with a yellow felt, within its point there is a deep purple beard of very fine hairs, and on the under side is another such beard of fine hairs; at the end of the lip is a purple brush of threads, which by a current of air, waving about, produce a graceful and pretty effect; the lip, with its yellow felt, purple brushes, and two beards, is jointed so delicately that a very slight breath produces a rocking movement, which makes it appear as if some animal nature was possessed by the plant: the flower is a most extraordinary production. Messrs. Loddiges have another species of similarly curious habits. The plant has something of the appearance of a small kind of Oncidium. Bolbophyllum, from *bolbos*, a bulb, and *phyllum*, a leaf; alluding to the leaves arising from a bulb-like stem.

19. *Cratægus flava*, Rough-barked Thorn, Roseaceæ. Icosandria Pentagynia. The single fruited variety was noticed last month, the

present species bears its fruit in clusters of three or four berries upon each, they are of a greenish-yellow.

20. *Chysis aurea*, Golden flowered. Orchidaceæ. Gynandria Monandria. Another splendid flowering species of Orchideous Epiphyte, which has been introduced into this country by Mr Lowe, of Clapton, in 1835; it was collected by Mr Henchman, in the valley of Cumancoa, in Venezuela. Mr H. describes it as growing suspended by long fibrous roots, from the lateral branches of trees, so that its pseudo-bulbs hanging pendulous wave in the wind, and produces a spike of ten flowers. Mr. Bateman of Knypersley, has a plant of it which has grown very rapidly suspended from a rafter in a pot, planted in turfy-peat and broken potsherds. The stems are in structure very like those of a Cyrtopodium or Catasetum, but its real affinity is to the genus Epidendrum and its section. The flowers are very showy, each about an inch and a half across, the sepals are white at the lower part, of a golden-yellow. Labellum, white, with deep red veined stripes. Petals same color as the sepals. *Chysis* from *chusis*, a melting. The pollen masses being as it were fused together.

21. *Delphinum montanum*, Mountain Larkspur. Ranunculaceæ. Polyandria Trigynia. Sinonym. D. elatum. D. hirsutum. One of the handsomest flowering species, a native of the Alps of Europe. It is a hardy perennial, flowering from August to October: growing from five to seven feet high. The plant is covered with soft-green down, and the flowers are of a pale sky-blue, slightly tinged with purple. This is an old inhabitant of our gardens, but, we have given these particulars in order, that our readers who may possess the kind and not know its real name, may be able to do so.

22. *Daviesia ulcinia*, Furze-like. Leguminose. Decandria Monogynia. A very neat and handsome flowering greenhouse plant, a native of New Holland, it well deserves a place in every collection. The plant forms a very neat bush; the flowers are produced in vast profusion, and are very neat and pretty, much resembling, but a little larger, than those of the Eutaxia Myrtifolia. They are produced from April to June, and they are of a bright yellow with red centre. *Daviesia* so named in compliment to Rev. Hugh Davies, F. L. S., a celebrated Botanist in Wales.

23. *Epidendrum chloroluceum*, Green and White flowered. Orchidaceæ. Gynandria Monandria. This new species has bloomed in

the collection of John Allcard, Esq., in September, 1836, and by that gentleman imported from Demerara ; the flowers are rather uninteresting in appearance; they are produced on a raceme of eight or ten upon each, about three quarters of an inch across; they are without scent; sepals and petals green; lip white. *Epidendrum* from *epi*, upon; and *dendron*, a tree.

24. *Euphorbia fulgens*, Fulgent flowered. Ephorbiaceæ. Dodecandria Prigynia. This very neat and handsome flowering plant is a native of Mexico, and has recently been introduced into this country. It has bloomed in the select collection of Lucombe, Price, &c., Exeter Nursery. It is an elegant ornamental Stove Plant; branched upright, leafy, growing freely, and blooming profusely; the leaves at the end of the shoots are of a pinkish purple color at the underside, and of a dark green above; the older leaves wholly of a green color; the flowers are produced in groups of three or four together in constant succession along the shoots; each flower is near half an inch across, of a bright red color with a small yellow tube. The brilliancy of the flowers, their vast profusion, and elegance of the plant, render it a very desirable, and which ought to be in every collection of hot house plants. It propagates very easily, and grows rapidly. *Euphorbia*, so named in compliment to Euphorbus, a physician to Juba, King of Mauritania, and who is said to have first used the plant in medicine.

25. *Gesneria sellowi*, Dr Sellows Gesneira, Gesnerieæ. Didynamia. Angiospermia. This very elegant flowering stove plant has been introduced into this country from the Brazils, and has been specifically named after Mr Sellow, a collector of plants, employed by the Prussian Government. It well deserves to be in every collection of hot house plants. The flowers are produced in a raceme, numerous upon each; of a fine scarlet color. Each flower is about three inches long. *Gesneria*, in honor of Conrad Gesner, a famous Botanist of Zurich.

26. *Lissochilus speciosus.* Mr Griffin's Showy Lissochilus. Orchidaceæ. Gynandria Monandria. A native of the Cape of Good Hope, from whence it was imported by Mr. Griffin, of South Lambeth, London, in whose collection it has bloomed.—It is one of the terrestrial Orchideæ, which flowers freely from May to August: a hot house of moderate temperature appears to suit the plant best. The flowers are produced upon a scafe rising two feet high, of a fine

yellow color. Each flower is upwards of two inches across. Like this tribe of orchideous plants, the present delights in a rich loamy soil, mixed with peat and sand, the pot to have a good proportion of drainage, care being taken not to have too large a pot.

72. *Morna nitida*, The beautiful Morna. Asteracæ. Syngensia Polygamia æqualis. Sir James Sterling introduced this neat and pretty flowering plant into this country in 1835, from the Swan River, Australia; where it is found to inhabit the dry parts of the country. It has bloomed in the very select and extensive collection of R. Mangles, Esq., Whitemore Lodge, Sunning Hill, Berkshire. That gentleman exhibited it at the Horticultural Societies' Show, at Cheswick in 1836, and a medal was awarded for it.

It is a neat and delicate plant, producing cymose heads of numerous flowers, each about three quarters of an inch across, of a fine yellow color. They resemble the flowers of Elichrysun bracteatum, but are smaller, and very superior in delicacy and richness. It is a perennial plant, well meriting a place in every collection of herbaceous plants. Morna, so named after *Morna* one of the heroines of the northern romances.—*Floricult. Cab. London.*

Art. XI.—*Miscellaneous Articles.*

On the Passion Flower. — As you expressed a wish to receive my small communications, I forward them in time, I hope, for the February number. I am much obliged for your answer respecting the Billiardiera Melocarpa, and hope always to receive so speedy a reply. — "The name Passion Flower is derived from the Latin, "flos passionis," originally given to the plant by the Spaniards, from its supposed resemblance to the instruments of the Crucifixion of our Saviour. When they first discovered America, and found a flower seeming to represent so closely circumstances of so sacred a nature, they attached the most superstitious ideas to it. I have read that, in old botanical works, very curious prints are to be met with, in which the flowers seem to be composed of the things themselves, being evidently portrayed from the exaggerated accounts of the first discoverers, who saw in the five anthers, our Saviour's five wounds;

in the three styles, the nails by which he was fixed to the cross; in the column which rises from the base of the flower, the pillar to which he was bound. The resemblance appeared to the Roman Catholics so strong, that the name of the Passion Flower was bestowed on it; and it is now held in such veneration in South America, that the Nuns train it with very reverential feelings round the windows of their little dormitories." — *Flor. Cab.*

Currants.—Perhaps there is no fruit that can be raised in New England with greater ease than the *Currant*. The shrub we believe is never injured by the severest winters; and though the quality of the fruit is improved, and the quantity increased by cultivation, it will grow and flourish in almost any situation, and *will take care of itself*. But it is subject, after all, to one annoyance, which, so far as our observation extends, is of recent origin, and for which we should be glad to find a remedy. *Our* current bushes, during the last season, were infested with a set of filthy *lice*, which injured, and, in some instances, destroyed the fruit, by preventing its ripening. They have made their appearance this season. Their existence is indicated by the leaf turning from its natural lively green to a dull brownish red; before the fruit comes to maturity, the leaves will become yellow and fall from the stem. We know of no method of destroying these noxious vermin, but to pluck off the leaves and burn them; but this affects only those which are thus plucked off. You may strip off every leaf that exhibits this reddish appearance to day, but you will discover others of the same complexion, and from the same cause, to-morrow. The vermin live on the under side of the leaf, and, of course, secure from all processes of washing with a syringe, or any other instrument.

Is there any protection against these villanous and filthy intruders?—*Boston Courier.*

The Cottage.—"Roses bloomed in the garden—jessamines peeped through its lattices—and the fields about it smiled with the effects of careful cultivation. Lights were seen in the little parlor in the evening, and many a time would the passenger pause by the garden gate, to listen to strains of the sweetest music breathed by choral voices from the cottage. If the mysterious student and his wife were neglected by their neighbors, what cared they? Their endearing and mutual affection made their home a little paradise."—*New York Mirror.*"

A cottage garden, properly cultivated, is full of beauty. Its well formed walks and borders, adorned with fragrant flowers, exhibit a gorgeous display of richness which cannot be surpassed. The English cottager takes a praiseworthy pride in the various species of flowers which adorn his garden, and not unfrequently prizes are awarded to him by horticultural and other Societies, for his skill in bringing to maturity, and presenting the world with improved specimens of floriculture. The study of the vegetable kingdom is also a subject of his earnest solicitude, and the avidity with which he pursues this favorite object is the theme of frequent admiration. The cognomen of "the garden of England" is certainly an appropriate compliment, and it is but justice to remark that we are in a good degree indebted to the skill of the gardeners of our "father land" for many of the beautiful embellishments of our gardens. Our author recites several useful hints on this subject, which I here subjoin:

"Another way in which woman may make her labor extremely profitable is in the management of the garden. She may easily acquire skill and experience, and for my part I think she cannot have a prettier amusement. If there were nothing to be got by it, it is worth a little labor to have the view from your cottage window, ornamented with roses, honey-suckles, stocks, and mignonette, instead of seeing a heap of rubbish, or a slough, or a plantation of thistles or stinging nettles. But, let me tell you there is something to be got by it. If you live near a market town, and have a turn for gardening, I do not know of a better thing for a woman to turn her hand to. If proper pains were taken with a flower bed, (and I know of nothing which yields profit without taking pains, except it be money in the funds, and the likely way to have that, is by taking pains to produce it,) a flower bed well managed, will furnish you (besides supplying your bees, which, under such favorable circumstances, you will of course keep,) more than half the year with four or six nosegays a week, which may be sold to advantage. Suppose they bring you but three pence a week all the year round—thirteen shillings—it will buy your husband a new hat, or your child a warm coat. But this is not all—you will save some seeds of your annuals, and more than to stock your garden for the next year. These you will carefully separate and mark, keeping them from frost and rain in the winter, and then, in March or April, when people begin to

think of flower seeds, do them up in penny or two penny packets, and display them for sale. If you sell but two or three shillings worth, they will buy what lazy, shiftless people are distressed for." —*Newark Daily Advertiser.*

New Plant in the Pharmacopœia. — Mr Foote recently read a paper to the London Medico-Botanical Society on the *chimaphila corymbosa*, a plant lately admitted into the new edition of the Pharmacopœia (the Pyrola umbellata of Bigelow and others,) long and extensively used in the United States, where it is abundant, chiefly in shady woods. Various virtues are attributed to it, but it appears to be very analagous to *uva ursi* in its qualities. It is a powerful diuretic, and an infusion, sweetened with sugar, is very serviceable in the stranguary of gonorrhœa. Its diuretic properties also make it very useful in anasarca and other dropsies, and Dr Mitchell has found it valuable in intermittent fever and rheumatism, applied locally. It is also said to relieve toothache. It is generally employed in the form of a strong decoction.—*London Lancet.*

New Method of Propagating Apple Trees. — A new plan for increasing plantations of apple trees has lately been carried into extensive practice by the horticulturists of Bohemia.—Neither seeds nor grafting is required. The process is to take roots from the choicest sorts, insert them in a potato, and plunge them both into the ground, leaving but an inch or two of the shoot above the surface. The potato nourishes the shoot, while it pushes out roots, and gradually grows up and becomes a beautiful tree, bearing the best fruit it can without requiring to be grafted.

Whatever may be the success of the undertaking, its novelty at least is an inducement to give it a fair trial.—*Farmer and Gardener.*

Maple Sugar. — Those who have the present year been engaged in the manufacture of maple sugar, have found their labor well rewarded. When the process of making it is properly conducted, the sap of the maple furnishes one of the most delicious sweets in existence, and one which for use is more profitable than any other. To be thus profitable, it should not be grained too coarse and dry, since pure crystals of sugar are nearly as hard as flint, and possess little apparent sweetness, until thoroughly dissolved. Too much of the sugar manufactured from the maple is slovenly made, and imper-

fectly cleansed, and this has a tendency to lessen the value of the article in the market, and in public estimation.

Few are aware of the quantities of this necessary article furnished by our own forests; or the ease with which the supply might in many cases be doubled. What is called the *run*, was this year short, not occupying more than a fortnight's time in the whole; and as none of the days were warm, so as to cause the sap to sour, no difficulty was experienced in making the whole into sugar of good grain. In common years, the tendency to acidity, where sap is kept a short time, may be entirely corrected by the use of lime, a small quantity of which should be thrown into the reservoirs containing the sap. The sap this year has been uncommonly rich in its saccharine properties, and we have known of several instances, in which from sixty to sixty-five trees, three hundred and fifty pounds of sugar have been made; and the average yield will, it is presumed, not fall short of five pounds to a tree.

The introduction of beet sugar *may* supersede that of the maple, or the cane, for general use; but we hold it a correct principle of action, that a farmer should rarely, if ever, purchase of others what he can produce on his own farm, and we hope no one will destroy his sugar works, until he has ascertained that the manufacture of beet sugar will succeed in this country. On the contrary, we think the farmer is wise who plants this beautiful and valuable tree, wherever a proper situation or opening presents itself; and there are few places by the road-side, or on the farm, where its presence would be productive of injury. Its value to the farmer and to the State may be inferred from the fact, that the amount of sugar made in the several counties in this State, cannot fall short of twelve millions of pounds, and worth, at ten cents a pound, one million two hundred thousand dollars. Such a saving in expenditure to the country should not be considered as a trifle; and it should be remembered, too, that the labor and time required for making this sugar is called for at a season when it cannot be available for the other labors of the farm.—*Genesee Farmer*.

To Destroy Slugs, Woodlice, Earwigs, &c.—Take some cabbage leaves, and either put them in a warm oven, or hold them before a fire, until they are soft, then rub them with salted butter, or any kind of fresh dripping, and lay in the places infested.

QUINCY MARKET.

[Reported for the Horticultural Register.]

ASPARAGUS,	bunch	8	10
APPLES, Baldwins	barrel	3 00	
Russets,	"	2 25	2 50
Dried,	pound	6	7
BEETS, (Long Blood,)	bushel	1 50	
BEANS, (White,)	"	2 25	
BANANAS,	dozen	37	
COCOANUTS,	hundred	4 00	
CRANBERRIES,	bushel	6 00	
CARROTS,	"	1 50	
CABBAGE, none			
Sprouts,	peck	12	
CUCUMBERS,	pair	25	50
DANDELIONS,	peck	12	
HORSE RADISH,	pound	10	12
LETTUCE,	head	3	6
LEMONS,	box	3 00	
ONIONS,	bushel	1 50	
ORANGES, Havana	hundred	3 00	
Sicily,	box	3 00	
POTATOES, common,	bushel	67	75
St Helena,	"	1 00	
PEAS, (Green)	peck	75	
PICKLES, (Cucumbers,)	gallon	37	
Peaches	"	50	
NUTS, (Shagbarks,)	barrel		
English Walnuts	pound	3	5
Filberts,	"	3	5
RADISHES,	bunch	6	
RUTA BAGA,	bushel	75	
RHUBARB,	pound	4	6
SQUASHES, West India,	"	2	
TURNIPS, English,	bushel	75	
WATER MELONS,	each	75	

Apples, with the exception of Russets, are getting scarce and out of season. The market appears to be abundantly supplied with Lettuce, Radishes, Asparagus and Rhubarb. The Green Peas quoted above are from the South, and some damaged. Beets, Carrots, Onions, Ruta Baga, &c. are of inferior quality and very few in market. We noticed a few young Beets for greens, also Spinage, Cabbage Sprouts and Dandelions. Rhubarb, an article a few years since hardly known, is now in abundance and at a moderate price. Fine Cucumbers were exhibited in some of the stalls; more attention appears to be paid to the forcing of this vegetable than formerly. The Watermelons and Squashes are from the West Indies.

We have never seen a greater abundance of Pine Apples, or of finer quality, than at the present time. In the stall of Messrs Tombs & Staples, we noticed some gigantic specimens of Pine Apples plants, in barrels, in a growing state, with fruit upon them of remarkable large size—$2 per plant was asked for some of the finest.

Boston, May 30, 1837.